

Catalogue of American Amphibians and Reptiles.

Townsend, J.H. and L.D. Wilson. 2006. *Geophis fulvoguttatus*.

***Geophis fulvoguttatus* Mertens**

Geophis fulvoguttatus Mertens 1952a:134. Type-locality, "Hacienda Monte Cristo, 2200 m. H. Gebirge von Metapan, Dept. Santa Ana, El Salvador." Holotype, Senckenberg Forschungsinstitut und Naturmuseum (SMF) 43248, juvenile male, collected the 26th or 27th of August 1951 by Adolf Zilch (not examined by authors).

• **CONTENT.** No subspecies are recognized.

• **DEFINITION.** A small snake (SVL to 398.1 mm) in the *Geophis dubius* group (*sensu* Nieto-Montes De Oca 2003), *G. fulvoguttatus* can be characterized as follows: dorsal scales smooth throughout, without apical pits, in 17–17–17 rows; 135–157 ventrals; cloacal scute entire; 24–36 subcaudals; 171–181 ventrals + subcaudals; tail length 11.3–18.1 % of total length. The following head scale characteristics are based on all available material (Table 1), with measurements based on University of Kansas Museum of Natural History (KU) 57996 (adult male; 335 mm total length; Hacienda Montecristo, Cordillera de Metapán, 2200 m elev., Depto. Santa Ana, El Salvador) and KU 214781 (adult female; 398.1 mm total length; El Portillo de Ocotepeque, 1900 m elev., Depto. Ocotepeque, Honduras) (Fig. 1). Two internasals, 1.08–1.4 times as wide as long; internasal common suture 57–64% length of prefrontal common suture; 1 prenasal and 1 postnasal, with postnasal 1–1.08 times as long as prenasal; 2 prefrontals 77–79% of snout length; prefrontal common suture 41–44% of frontal length; single loreal contacting orbit and postnasal, loreal 1.4–1.7 times as long as wide; preocular absent; 0–1 supraocular per side, the length of which (when present) is 47–71% the length of the loreal; frontal 6-sided, 1–1.06 times as wide as long; frontal-supraocular contact length 56–60% of supraocular length; single postocular 1.33–2 times as wide as long; 6 supralabials, with fifth supralabial largest; 6–7 infralabials; 2 parietals, 1.69–1.89 times as long as wide; parietals 50–51% of head length (as measured from tip of snout to posterior margin of parietals); parietal common suture length 75–97% of frontal length; anterior temporals absent; right and left posterior temporals are separated by 1 medial and 3–4 lateral nuchals; mental 1.86–2.33 times as wide as long and separated from anterior chinshields by first pair of infralabials; first pair of infralabials in broad contact, with their common suture being 30–80% of their total length; anterior chinshields 1.6–1.85 times as long as broad and 1–1.58 times longer than the posterior chinshields; posterior chinshields narrowly to broadly in contact, with their common suture being 15.8–30.4% of their total length.

Color in life of KU 214781, as described by McCranie and Wilson (1991:113), is as follows: dorsal

surface very dark gray with 26 red-orange middorsal spots more prominent posteriorly and with 2–3 dorsal and 4–8 alternating lateral spots on the tail; dorsal surface of head gray, paling laterally onto supralabials; ventral surface white with dark gray on the lateral edges of the ventral scales; subcaudal surface white infused with brownish gray.

Downs (1967:89) described the maxilla as extending "anteriorly to suture between first and second supralabials; anterior extension greater than that of palatine; maxilla curved in lateral view, most slender anteriorly; 10 maxillary teeth, increasing in length posteriorly; first tooth at anterior tip of maxilla; posterior end of maxilla laterally compressed into moderate flange; anterior end of ectopterygoid bifurcate, one branch short and blunt, second branch long, compressed, blade-like; no postorbital bone."

In the same work, Downs (1967:89) described the hemipenis of KU 57996 as bearing a single large spine and numerous small spines on the basal portion; a naked basal pocket present on the asculus side, flanked by ridges; central part of hemipenis bearing 35 long, slender spines arranged in oblique rows; distal portion of hemipenis capitate, with the capitation obscured by gradation between spines on central portion of hemipenis and spines on proximal edge of spinulate capitulum; calyces discernable at apex only; apex bilobed; sulcus spermaticus bifurcate, with each branch reaching the apex of one lobe.

FIGURE



Figure 1. Two preserved specimens of *Geophis fulvoguttatus*: an adult male (KU 57996), 335 mm total length, from Hacienda Montecristo, Cordillera de Metapán, 2200 m elev., Depto. Santa Ana, El Salvador; and an adult female (KU 214781), 398 mm total length, from El Portillo de Ocotepeque, 1900 m elev., Depto. Ocotepeque, Honduras.

• **DIAGNOSIS.** *Geophis fulvoguttatus* has 17 dorsal scale rows throughout the body, distinguishing it from all species of *Geophis* with 15 dorsal scale rows throughout the body: *G. bellus*, *G. betaniensis*, *G. brachycephalus*, *G. cancellatus*, *G. championi*, *G. damiani*, *G. downsi*, *G. dugesii*, *G. godmani*, *G. hoffmanni*, *G. incomptus*, *G. juliai*, *G. laticinctus*, *G. latimaculatus*, *G. maculiferus*, *G. nigroalbus*, *G. nigrocinctus*, *G. petersii*, *G. russatus*, *G. ruthveni*, *G. sallaei*, *G. semidoliatus*, *G. talamancae*, *G. tarascae*, and *G. zeledoni*. Of the members of the *chalybeus* group

Table 1. Comparison of key characteristics of 5 specimens of *Geophis fulvoguttatus* (a = SMF 43248*, b = KU 57996, c = KU 183881, d = KU = 214781, e = KU 214782**). * = SMF 43248, which was not examined by the authors and is damaged on the anterior portion of the body; scale counts and estimates from Mertens (1952a). ** = KU 214782 is a tail of a specimen that was regurgitated by a *Micrurus diastema* (McCrane and Wilson 1991). Linear measurements in mm.

	a	b	c	d	e
sex	M	M	F	F	—
ventral scales	145–150*	137	157	145	—
subcaudal scales	36	34	24	35	36
supralabial scales	6/6	6/6	6/6	6/6	—
infralabial scales	6/6	6/6	6/6	7/7	—
SVL	110*	281	297	353	—
tail length	20	54	38	45	43
Tail length/total length	0.181*	0.161	0.113	0.113	—

with 17 dorsal scale rows, *G. bicolor* differs from *G. fulvoguttatus* in having 2 postocular scales (only 1 postocular in *G. fulvoguttatus*), and *G. chalybeus* has more subcaudals (38–41) than does *G. fulvoguttatus* (24–36 subcaudals). *Geophis fulvoguttatus* is separated from the members of the *sieboldi* group that possess 17 dorsal scale rows (*G. dunni*, *G. nasalis*, *G. pyburni*, and *G. sieboldi*), and from some members of the *dubius* group (*G. carinosus*, *G. juarezi*, and *G. rostralis*) by having smooth dorsal scales throughout the length of the body (dorsal scales keeled on at least the posterior part of the body in those species). *Geophis fulvoguttatus* differs from most of the members of the *latifrontalis* group (*G. latifrontalis* and *G. mutitorques*) and the members of the *omiltemanus* group that have 17 dorsal scale rows (*G. isthmicus* and *G. omiltemanus*) by lacking an anterior temporal (anterior temporal present in *latifrontalis* group [except *G. blanchardi*] and *omiltemanus* group). *Geophis blanchardi* differs from *G. fulvoguttatus* by having a patternless dorsal surface and a checkered ventral surface (dorsal surface with irregular blotches and ventral surface not checkered in *G. fulvoguttatus*).

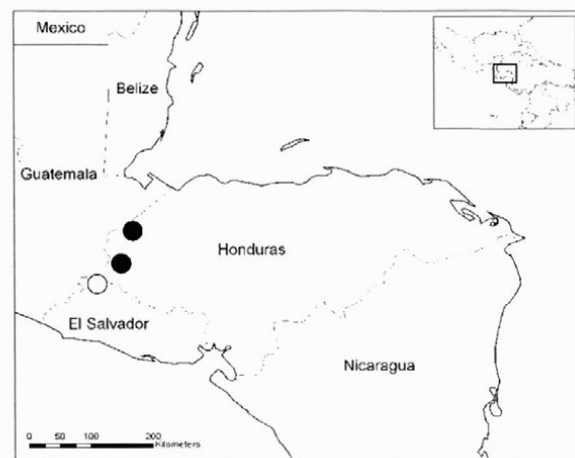
Of the remaining species in the *dubius* group, *G. fulvoguttatus* can be differentiated from *G. dubius* by having internasals that are distinct from the prefrontals (internasals usually fused to prefrontals in *G. dubius*), from *G. anocularis*, *G. duellmani*, and *G. rhodo-*

gaster by having 1 supraocular and 1 postocular on at least one side (supraocular and postocular absent in *G. anocularis* and *G. duellmani*; supraocular absent in *G. rhodogaster*), from *G. immaculatus* by having irregular blotches on the dorsal surface (patternless dorsal surface in *G. immaculatus*), and from *G. nephodrymus* by usually having more ventrals (135–157) and a higher segmental count (171–181) (*G. nephodrymus* with 120–138 ventrals, segmental count 149–160).

• **DESCRIPTIONS.** Downs (1967) and Townsend (2006) provided detailed descriptions of *G. fulvoguttatus*, including details of scutellation, the maxilla, the hemipenis, and coloration. A less detailed description of scutellation and coloration is in Köhler et al. (2006).

• **ILLUSTRATIONS.** A black-and-white photograph of the type specimen appears in Mertens (1952b). Downs (1967:80) provided black-and-white line drawings of the lateral and dorsal aspects of the head of an adult male. A color photograph of a preserved specimen is in Köhler et al. (2006).

• **DISTRIBUTION.** The mountains of northwestern El Salvador and western Honduras on both the Caribbean and Pacific versants, 1680–2200 m elevation; likely occurs in the highlands of southeastern Guatemala.



Map. Known distribution of *Geophis fulvoguttatus*. The open circle denotes the type-locality. Closed circles indicate other reported localities. Map courtesy of Blake Matejowsky.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** The name *Geophis fulvoguttatus* appears in the following publications describing other *Geophis* species: Smith and Holland (1969), Campbell et al. (1983), Wilson et al. (1998), Nieto-Montes De Oca (2003), and Townsend and Wilson (2006). The species was included in a review of the Mexican herpetological literature published by Smith and Smith (1976). Greenbaum and Komar (2005) included *G. fulvoguttatus* in a threat assessment of El Salvadoran herpetofauna, and Wilson and

McCranie (2004a,b) included it in their examinations of the conservation status of the herpetofauna of Honduras and their study of the cloud forest herpetofauna of the same country.

Geophis fulvoguttatus appears in the following checklists, keys, distributional and biogeographical works: Mertens (1952b), Peters and Donoso-Barros (1970), Wilson and Meyer (1982, 1985), Villa et al. (1988), McCranie and Wilson (1991), Köhler (1996; [see **Remarks**], 2001), Dueñas et al. (2001), Wilson et al. (2001), Wilson and McCranie (1994, 2002, 2004b), Köhler (2003), McCranie (2005), Köhler et al. (2006), and Townsend (2006).

• **REMARKS.** Köhler (1996:36) mistakenly applied the name *G. fulvoguttatus* to a specimen of *G. rhodogaster* (SMF 77413).

• **ETYMOLOGY.** The specific epithet *fulvoguttatus* is derived from the Latin 'fulvus', meaning "reddish yellow" or "tawny," and 'guttatus', meaning "speckled" or "spotted," in reference to the dorsal pattern of this snake.

• **COMMENT.** The anterior portion of the body of the holotype of *G. fulvoguttatus* is damaged, precluding an accurate count of the ventral scales.

• **ACKNOWLEDGMENTS.** We would like to thank John Simmons (KU) and Gunther Köhler (SMF) for loan of specimens under their care. Eli Greenbaum (KU) kindly provided information on this species from a pre-publication manuscript. Museum acronyms follow Leviton et al. (1985).

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Primary editor for this account, Andrew H. Price.

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